

**Travis Air Force Base  
Environmental Restoration Program  
Remedial Program Manager's  
Meeting Minutes**

**18 July 2012, 0930 Hours**

Mr. Mark Smith, Travis Air Force Base (AFB), conducted the Remedial Program Manager's (RPM) meeting on 18 July 2012 at 0930 hours, at Travis AFB, California. Attendees included:

- Mark Smith Travis AFB
- Glenn Anderson Travis AFB
- Lonnie Duke Travis AFB
- Merrie Schilter-Lowe Travis AFB
- Gregory Parrott Travis AFB
- Alan Friedman California Regional Water Quality Control Board (RWQCB)
- Jose Salcedo California Department of Toxic Substances Control (DTSC)
- Nadia Hollan Burke United States Environmental Protection Agency (USEPA)
- Mary Snow Techlaw, Inc
- Rachel Hess ITSI
- Mehrdad Javaherian JC Palomar
- Mike Wray CH2M HILL
- Loren Krook CH2M HILL
- Tricia Carter CH2M HILL
- Tony Chakurian CH2M HILL

Handouts distributed at the meeting and presentations included:

- Attachment 1 Meeting Agenda
- Attachment 2 Master Meeting and Document Schedule
- Attachment 3 SBBGWTP Monthly Data Sheet (June 2012)
- Attachment 4 CGWTP Monthly Data Sheet (June 2012)
- Attachment 5 NGWTP Monthly Data Sheet (June 2012)
- Attachment 6 ST018GWTP Monthly Data Sheet (June 2012)
- Attachment 7 Presentation: Lysimeter Removal
- Attachment 8 Presentation: Enzyme Assessment Results

- Attachment 9                      Presentation: 5-Year Review
- Attachment 10                    Presentation: Program Update: Activities Completed, In Progress and Upcoming

**1. ADMINISTRATIVE**

**A. Previous Meeting Minutes**

The 13 June 2012 RPM meeting minutes were approved and finalized as written.

**B. Action Item Review.**

Action items from June were reviewed.

Action item one still open: Travis AFB to research beneficial reuse of treated water. Mr. Smith will contact the Project Manager at AFCEE to discuss, and give an update at next RPM meeting. Mr. Smith talked with AFCEE regarding beneficial reuse, AFCEE is looking into it. Update: AFCEE is in agreement with treated water reuse using Defense Environmental Restoration Account (DERA) funds under the authority of a “net-zero policy” for the Air Force. More information to follow.

Action item two still open: EPA and DTSC to email Travis AFB the person’s name and title who will be signing the ROD.

Action item three still open: Give a Groundwater ROD presentation to EPA. Date was changed to TBD.

**Master Meeting and Document Schedule Review (see Attachment 2)**

The Travis AFB Master Meeting and Document Schedule (MMDS) was discussed during this meeting (see Attachment 2).

**Travis AFB Annual Meeting and Teleconference Schedule**

— The next RPM meeting will be held on 15 August 2012 at 0930 hours.

**Travis AFB Master Document Schedule**

— Proposed Plan (PP): The Response to Comments Meeting date changed to 18 July 2012, due to the amount of comments Travis AFB received from the agencies. The Draft Final will include the last minute changes and will be reviewed by AFCEE and The Agencies. The only change anticipated between Draft Final and The Final will be the dates for The Public Meeting, and The Public Comment Period. Ms. Burke asked if the Draft Final will be co-reviewed by AFCEE and the Agencies before going Final. Mr. Anderson said yes, Travis AFB has to receive approval on the PP from AFCEE. The rest of the dates were changed accordingly.

- Groundwater Record of Decision (ROD): Predraft to AF/Service Center was changed to 03 August 2012. The rest of the dates were changed accordingly.
- Potrero Hills Annex: (FS, PP, and ROD): No change to schedule. Mr. Anderson said that the Work Plan (WP) has been received and has a three phase approach for investigating Perchlorate in both soil and groundwater.
- Technical Memorandum for Assessment of Aerobic Chlorinated Cometabolism Enzymes: No change to schedule. Travis AFB received comments from EPA. The RWQCB and DTSC had no comments.
- Work Plan for Remedial Process Optimization of Sites SS016 and SS029: The agencies comments have been resolved. The Final will go out on Friday, 20 July 2012.
- Technical and Economic Feasibility Analysis (TEFA): Moved to history.
- Site LF007C Data Gaps Investigation Technical Memorandum: No change to the schedule. Travis AFB is responding to EPA's comments. The RWQCB and DTSC both reviewed the document and had no comments.
- FT005 Remedial Action Completion Report: The Draft to Agencies date was changed to 20 July 2012. The rest of the dates were changed accordingly. A new appendix (I) was added due to the removal of Land Use Controls (LUC).
- Quarterly Newsletter (July 2012): The Final Due date was changed to TBD. The newsletter has been written to advertise the availability of the Groundwater Proposed Plan (PP), so the newsletter will be finalized and published as soon as the Proposed Plan public meeting schedule becomes firm.
- 2011 Groundwater Treatment RPO Annual Report: The Final Due date was changed to TBD. Travis AFB has received EPA comments and is working on the responses.
- 2011 CAMU Annual Report: Moved to history.
- Old Skeet Range Engineering Evaluation/Cost Analysis: No change to the schedule.

## 2. CURRENT PROJECTS

### Treatment Plant Operation and Maintenance Update

Mr. Duke reported on the treatment plant status.

#### **South Base Boundary Groundwater Treatment Plant (see Attachment 3)**

The South Base Boundary Groundwater Treatment Plant (SBBGWTP) performed at 100% uptime, and 4.9 million gallons of groundwater were extracted and treated during the month of June 2012. All of the treated water was discharged to Union

Creek. The average flow rate for the SBBGWTP was 122 gallons per minute (gpm). Electrical power usage was 11,760 kWh and approximately 16,111 pounds of CO<sub>2</sub> were created (based on DOE calculation). Approximately 2.5 pounds of volatile organic compounds (VOCs) were removed in June. The total mass of VOCs removed since startup of the system is 424 pounds.

Optimization Activities: No optimization activities to report for the month of June.

#### **Central Groundwater Treatment Plant (see Attachment 4)**

The Central Groundwater Treatment Plant (CGWTP) performed at 69% uptime with approximately 1.1 million gallons of groundwater extracted and treated during the month of June 2012. All treated water was diverted to the storm drain. The average flow rate for the CGWTP was 40.3 gpm. Electrical power usage was 1,672 kWh for all equipment connected to the Central plant, and approximately 2,291 pounds of CO<sub>2</sub> were created. Approximately 3.3 pounds of VOCs were removed from groundwater in June. The total mass of VOCs removed since the startup of the system is 11,286 pounds.

Optimization Activities for WTTP: The WTTP remains off line since it was shut down in April 2010 for the ongoing rebound study. No additional optimization activities to report for the month of June.

Optimization Activities for CGWTP: No optimization activities to report for the month of June.

#### **North Groundwater Treatment Plant (see Attachment 5)**

The North Groundwater Treatment Plant (NGWTP) was brought on-line on 6 June 2012 for approximately seven hours before system samples were collected. All groundwater was routed through the NGWTP carbon vessels and was discharged to the effluent holding tank. The transfer pump was taken off line awaiting analytical results before being discharged to the Duck Pond.

The North Groundwater Treatment Plant (NGWTP) performed at 1% uptime with approximately 560 gallons of groundwater extracted and treated during the month of June 2012. The average flow rate of the NGWTP, while operating, was 0 gpm and electrical power use was 457 kWh for all the equipment connected to the North plant; approximately 626 pounds of CO<sub>2</sub> was created. Approximately 0 VOCs were removed from the groundwater in June. The total mass of VOCs removed since the startup of the system is 174.3.

Note: the average flow rates were not calculated since the system only ran for startup sample collection and no water was discharged to the duck pond.

#### **Site ST018 Groundwater (MTBE) Treatment Plant (see Attachment 6)**

The Site ST018 (MTBE) Treatment Plant (ST018 GWTP) performed at 91% uptime with approximately 191 thousand gallons of groundwater extracted and treated during the month of June 2012. All treated water was diverted to the storm drain. The average flow rate for the ST018 GWTP was 4.73 gpm. Electrical power usage for the month was 178 kWh for all equipment connected to the ST018 GWTP plant, which equates to the creation of approximately 244 pounds of CO<sub>2</sub>. Approximately 2.63 pounds of BTEX, MTBE and TPH were removed from groundwater in June. The total BTEX, MTBE and TPH mass removed since the startup of the system is 17.3 pounds.

Note: electrical power use is for the alarm system and a pump that pushes water through the GAC. The other pumps in the system are all solar powered.

Optimization Activities: No optimization activities to report for the month of June.

### **3. Presentations**

#### **Lysimeter Removal (see Attachment 7)**

Ms. Hess reported on the Lysimeter Removal. See attachment 7 for details. Highlights included:

##### LF007 CAMU History:

- The LF007 Corrective Action Management Unit (CAMU) was constructed in December 2002 on top of the former municipal landfill, and capped with an engineered evapotranspiration (ET) final cover system.
- In 2003, a lysimeter was installed, and was intended to be monitored for one year to verify that the ET cover performed as designed. After installation, monthly monitoring was conducted. The monitoring results collected since 2008 had produced increasingly contradictory data due to normal wear and tear of the equipment.
- With regulatory agency approval the lysimeter monitoring ceased in May 2010 and was scheduled for removal.

##### LF007 Lysimeter Removal:

- Lysimeter removal activities were conducted 18 June through 21 June 2012.
- Clean cover soil removed from the lysimeter was reused to refill the excavation void after the removal. Water trucks were used for dust control during the removal. Approximately 18 cubic yards of pre-sampled Potrero Hills Quarry borrow soil was used to supplement the reused soil during backfill and compaction activities.
- Concrete was recycled for reuse on the Travis AFB runway project and one poly tank was repurposed. Plastic liners and two poly tanks containing grout were disposed of at a local municipal landfill.

Mr. Salcedo asked if they put down hydro-seed. Ms. Hess said it will be seeded this fall and that they will also install settlement markers and settlement stakes later this year (September or October 2012).

Ms. Hess provided pictures of the lysimeter removal before, during and after removal. See attached for photos.

Ms. Hess concluded by saying that the final documentation will be in the 2012 annual CAMU report.

### **Enzyme Assessment Results from Sites FT004 and DP039 (see Attachment 8)**

Mr. Chakurian reported on the Enzyme Assessment Results from Sites FT004 and DP039. See attachment 8 for details. Highlights included:

Goal of the Enzyme Study was to determine, through analysis of enzyme cometabolism, if there is a biological component associated with observed natural attenuation of VOC plumes at Travis AFB.

#### Sample Locations:

- Sites FT004 and DP039 were selected for the Enzyme Cometabolism Evaluation; both sites have MNA components. The two sites are located on opposite sides of Travis AFB. The areas to be sampled have low to non-detect concentrations of DCE and vinyl chloride (daughter products).
- Site FT004 was also selected because the TCE concentrations have been decreasing when its Groundwater Extraction and Treatment (GET) system was turned off as part of a rebound study since December 2007.
- Four monitoring wells from Site FT004 were sampled for VOC, Enzyme Activity Probe (EAP) and Quantitative Polymerase Chain Reaction (qPCR) analyses. One of the wells sampled is located upgradient of the VOC plume and represents the background, which is non-detect.
- Two monitoring wells from Site DP039 were sampled for VOCs, EAPs and qPCR. A duplicate sample was collected from one of the DP039 wells for QA/QC.

Mr. Chakurian provided maps of FT004 and DP039 to show where the sites are located on Travis AFB and the location of the sampled wells (see attachment).

#### Enzyme Activity Probe Analyses:

- The EAP study was performed to evaluate the presence and activity of five enzymes that cometabolically degrade TCE.

- The groundwater samples were each analyzed using five EAPs. To confirm the presence of the enzymes identified during the EAP analysis, qPCR analyses were conducted for each groundwater sample. qPCR identifies the presence of the genes of the bacteria that produce the enzymes being evaluated by EAP analyses.
- TCE concentrations at the monitoring wells were similar to previous sampling events. There were low to non-detect concentrations of DCE and vinyl chloride. The background well MW264x04 is non-detect for chlorinated VOCs (see attachment for EAP and qPCR results).

Plume Attenuation:

- For MNA to be considered a viable remedy, it is necessary to demonstrate plume attenuation (stable or shrinking).
- A limitation of the EAP and qPCR data is that the demonstration of the activity of cometabolic enzymes cannot fully show the degree to which cometabolism contributes to the natural attenuation of a solvent plume. However, if contaminant concentrations are decreasing over time and cometabolic enzymes and microbes are present and active, then it can be inferred that microbial processes may be contributing to the reduction of contaminant mass.

The results of the investigation are indicative of enzymatic cometabolic activity at similar but geographically distant groundwater sites and provide one line of evidence supporting the occurrence of biological natural attenuation at Travis AFB. Due to the similar hydrogeologic conditions across Travis AFB, it is likely that cometabolic enzymes are widespread at the base, and that cometabolic activity may be contributing to natural attenuation not only at Sites FT004 and DP039, but also at other VOC plumes.

Ms. Burke asked if this study helps with future remedy optimization. Mr. Smith said it could, but it is too early to tell; Travis AFB wanted to demonstrate by conducting this study that the biological component of natural attenuation could be happening across the base, given the similar geographical topography on base. Mr. Anderson added it was not an exhaustive study. We know the plumes aren't moving. Travis AFB learned through the phytostabilization treatability study that volatilization of dissolved solvents is taking place. It could be that in the summer the ground develops desiccation cracks that promote the off-gassing. During the winter when the desiccation cracks are closed, a greater amount of MNA could be attributed to biological degradation.

**Five-Year Review and Site List (see Attachment 9)**

Mr. Javaherian reported on the Third Five-Year Review. See Attached 9 for details. Highlights included:

Mr. Javaherian said the process looks at the cleanup activities that have taken place in the last five years. The draft five-year review lists site name, site description, and status of environmental response activities, similar to what was included in the second five-year review. There will also be a section in the five-year review report that will include sites that were closed prior to the second five year review; this informal review will be included to confirm that the

cleanup goals have not changed. Included in Attachment 9 is the third five-year review schedule. Mr. Smith commented on the five year review schedule, stating that Mr. Chang, the previous EPA project manager, suggested Travis AFB include all sites with recent decision documents in the 2013 5-Year review rather than in 2017 as had been proposed by Travis. This allowed for more sites to be on the same 5-Year review schedule earlier. Mr. Smith handed out an all inclusive “site list” (not including the MMRP site) (see Attachment 9).

**Program Update: Activities Completed, In Progress and Upcoming (see Attachment 10)**

Mr. Wray reported on the status of field work and documents which are completed, in progress, and upcoming. See Attachment 7 for details. Highlights included:

Completed Field Work: CAMU Lysimeter Removal

In-Progress Documents and Field Work: Site LF007C Data Gaps Investigation Technical Memo.

Field Work In Progress: SS029/SS016 System Optimization Analysis

Upcoming Documents include FT005 Remedial Action Completion Report, and Basewide Groundwater Record of Decision (ROD).

Upcoming Fieldwork includes LF007C GET System Optimization.

**4. New Action Item Review**

None.

**5. PROGRAM/ISSUES/UPDATE**

Mr. Smith announced that the new PBR will be AFCEE controlled. The project will be awarded by AFCEE in April or May of FY13. A Request for Information was issued in June, and indicated there would be a site walk for interested contractors in August or September.

**6. Action Items**

Item #	Responsible	Action Item Description	Due Date	Status



1.	Travis AFB	Research beneficial reuse of treated water and give update. Mr. Smith will contact the Project Manager at AFCEE to discuss this issue, and give an update at the 13 June RPM meeting. Update: Mr. Smith talked with AFCEE regarding beneficial reuse, AFCEE is looking into it.	TBD	Open
2.	EPA & DTSC	Email Travis AFB the person's name and title who will be signing the ROD.	TBD	Open
3.	Travis AFB	Give a Groundwater ROD presentation to EPA.	TBD	Open